

CLAIMS:

1. An optical scanning device for scanning an information layer of an optical record carrier by means of a radiation beam of a predetermined wavelength, the device including:
- 5 a radiation source for supplying said radiation beam,
an objective lens for transforming said radiation beam into a scanning spot at the position of the information layer, and
a beam intensity modifier having an entrance pupil arranged on the side of said radiation source and an exit pupil arranged on the side of said objective lens, for redistributing the intensity over the cross-section of said radiation beam in order to change
10 the size of said scanning spot,
characterized in that said beam intensity modifier is arranged so that any ray of said radiation beam entering said beam intensity modifier at a distance r_1 from the central ray of said radiation beam reflects at least twice between said entrance and exit pupils such that the transverse magnification M of said intensity modifier is defined by a decreasing function
15 of the distance r_1 .
2. An optical scanning device according to Claim 1, wherein said beam intensity modifier has an entrance surface and an exit surface that are provided with a first part and a second part, respectively, that are reflective at said predetermined wavelength.
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3. An optical scanning device as claimed in Claim 2, characterized in that said first part is a central part and said second part is a marginal part, with respect to an optical axis of said beam intensity modifier.
- 25 4. An optical scanning device as claimed in Claim 2, characterized in that said first part is a marginal part and said second part is a central part, with respect to an optical axis of said beam intensity modifier.

5. An optical scanning device as claimed in Claim 2, characterized in that said first and second parts are marginal parts with respect to an optical axis of said beam intensity modifier.
- 5 6. An optical scanning device according to any of Claims 2 through 5, wherein said entrance and exit surfaces are further provided with a third part and a fourth part, respectively, that are refractive at said predetermined wavelength, and wherein said first and third parts are non-overlapping with each other and said second and fourth parts are non-overlapping with each other.
- 10 7. An optical scanning device according to any preceding claim, wherein said beam intensity modifier is further arranged for serving as a collimator lens or as said objective lens.
- 15 8. An optical scanning device according to any preceding claim, further including a detection system arranged for providing a focus error signal and/or a radial-tracking error signal and in that it further includes a servo circuit and an actuator responsive to said focus error signal and/or said radial-tracking error signal for controlling the positions of said scanning spot with respect to the position of said information layer and/or of a track
- 20 of said information layer which is to be scanned.
9. An optical scanning device as claimed in Claim 8, further including an information processing unit for error correction.
- 25 10. A beam intensity modifier for use in an optical scanning device for scanning an information layer of an optical record carrier by means of a radiation beam of a predetermined wavelength, the modifier having an entrance pupil and an exit pupil, for redistributing the intensity over the cross-section of said radiation beam,
- 30 characterized in that it is arranged so that any ray of said radiation beam entering said beam intensity modifier at a distance r_1 from the central ray of said radiation beam reflects at least twice between said entrance and exit pupils such that the transverse magnification M of said intensity modifier is defined by a decreasing function of the distance r_1 .